



Addis Ababa Science & Technology University

School of Civil Engineering and Construction Technology and Management
(Department of Construction Technology & Management)

A Project on Comparative Assessment of Risk Regulation under MDB-FIDIC & PPA-2011 Conditions of Contracts in Partial Fulfillment of the Requirement for the Degree of Master of Engineering (MEng) in Construction Technology and Management

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APPROVAL PAGE

This **MEng** project entitled with “**Comparative Assessment of Risk Regulation under MDB-FIDIC & PPA-2011 Conditions of Contracts**” has been approved by the following examiners in partial fulfillment of the requirement for the degree of **Master of Engineering (MEng)** in **Construction Technology and Management**.

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ABSTRACT

Risk is part of every human endeavor. From the moment we get up in the morning, drive or take public transportation to get to school or to work until we get back into our beds (and perhaps even afterwards), we are exposed to risks of different degrees. What makes the study of risk fascinating is that while some of this risk bearing may not be completely voluntary, we seek out some risks on our own (speeding on the highways or gambling, for instance) and enjoy them. While some of these risks may seem trivial, others make a significant difference in the way we live our lives.

Managing risks in a construction projects has been recognized as a very important management process in order to achieve the project objectives in terms of time, cost, quality, safety and environmental sustainability.

This paper aims to identify the rules and regulations of risks under MDB-FIDIC and PPA conditions of contract and other applicable laws. To support my paper with actual cases, questionnaire surveys were used to collect data from different insurance companies.

Keywords

MDB-FIDIC Conditions of Contract, PPA (2011) Conditions of Contract, Risk allocation, and Applicable Law

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MDB-FIDIC	Multilateral Development Bank- Federation Internationale Des Ingenieurs- Conseils
PPA	Public Procurement Agency
DBB	Design Bid Build
BOQ	Bill of Quantity
EoT	Extension of Time
PR	Procurement Entity
RFP	Request for Proposal
NBE	National Bank of Ethiopia
L/C	Letter of Credit
MoFED	Ministry of Finance and Economic Development
GNP	Gross National Product

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CHAPTER ONE

1. INTRODUCTION

All decisions about the future are made in the presence of considerable risks. Hence, Risks are always with us and can never be eliminated from our lives. Risks are important ingredients of and strong stimulus for creativity, development and investments. Often risk is either ignored or dealt within arbitrary way causing substantial losses or creates the involvement of unethical practices. When one admits that nothing is certain, one must also accept that some things are more certain than others.

Construction projects are always unique and risks raise from a number of the different sources. Construction projects are inherently complex and dynamic, and involving multiple feedback processes. A lot of participants – individuals and organizations are actively involved in the construction project, and their interests may be positively or negatively affected as a result of the project execution or project completion. Different participants with different experience and skills usually have different expectations and interests. This naturally creates problems and confusion for even the most experienced project managers and contractors.

Cost of risk is a concept many construction companies have never thought about despite the fact that it is one of the largest expense items, most of Construction Company owners give lesser attention to risk and risk associated issues. Insurance markets are very important for the construction company to share risks that may be arising during the different phases of construction projects.

Companies doing business in many countries face different laws and regulations in every Country where they operate. Those differing laws present number of complications for ensuring that there is adequate and compliant insurance coverage. Policies that don't comply with local regulations may not provide the company with coverage that is adequate in the local jurisdiction or may lead to unexpected problems with taxes and fines. Beyond regulatory concerns, contractors working in new countries may want the confidence and convenience that comes with having access to reliable local services to handle any local issues or claims.

1.1. BACKGROUND OF THE STUDY

Construction is a high-risk venture. Each project is unique and has its own specific design to be constructed on a particular site within a definite timeframe, cost, materials, equipment and labor. Successful construction requires flawless functioning of the project stakeholders comprising the client, the design team, the construction team, and various trades, manufacturers, suppliers in a professional and timely manner. In spite of the client and the contractor as the contract parties, other project players are involved in the construction process. Due to the different culture, interest and organizational structure of each of them, some parties represent a risk source to other parties.

The construction process is governed by complicated contracts involving complex relationships in several tiers. There are many risks involved in construction projects. These risks could be attributed to a number of reasons, which include the nature of the construction process, the complexity and time-consuming design and construction activities, and the involvement of a multitude of people from different organizations with different skills and interests.

The different types of construction contracts vary primarily with regard to who takes the risks involved, which party has to pay for the cost over runs and who keeps the savings if the project costs are less than that of the estimate one.

The different types of construction contracts that are available vary primarily in light of risk allocation.

1.2. STATEMENT OF THE PROBLEM

Often risk is either ignored or dealt within arbitrary way causing substantial losses. Cost of risk is a concept many construction companies have never thought about despite the fact that it is one of the largest expense items, most of Construction Company owners give lesser attention to risk.

Therefore, insurance markets are very important for the construction company to share risks.

1.3. OBJECTIVE OF THE STUDY

1.3.1. General objective of the study

The overall objective of the study is to develop an understanding of the theoretical aspect of risk in construction law and real application of the two conditions of contracts under consideration and of the applicable law to a given problem area and the analysis of same;

1.3.2. Specific objectives of the study

- To define risk in general and construction risk in particular;
- To identify all types & categories of construction risks in all phases of building construction Process/phases;
- To discuss on risk allocation & the fundamental principles to follow for the allocation;
- To discuss risk allocation & management at the construction stage through the said Conditions of contract; i.e., how various construction related risks allocated to the Employer or to the contractor under the said conditions of contracts;
- To focus & discuss in detail on building construction insurance within the Ethiopian insurance market;

1.4. SIGNIFICANCE OF THE STUDY

This study has a number of significant contributions. This study will be an effective tool and suggestion for the law makers and to other researchers to make any further relevant and pertinent study.

This study creates good opportunity for the student researcher to get more practical knowledge about Risk allocation under MDB-FIDIC and PPA (2011).

1.5. SCOPE AND LIMITATIONS OF THE STUDY

The scope of the study has been limited to risks related to building construction activities and its allocation under the MDB-FIDIC and PPA (2011) conditions of contracts. My study was conducted based on Design- Bid- Build (DBB) contract delivery system only and also the type of contract adopted for this particular case was Admeasurements of quantity executed or BOQ system.

Limitations for my study were;

- Unavailability of literatures in PPA Conditions of contracts,
- unwillingness of some insurance companies to provide actual cases since the cases are confidential for them.

1.6. RESEARCH METHODOLOGY

1.6.1. Research Design and Methodology

Research methodology of a given study is determined by the nature of the research. As a result, the methodology of this research is based on the use of both qualitative and quantitative data gathering techniques where the results are compiled, tabulated and analyzed and presented in this document. In this process, data has been collected and discussion has been made with different Insurance Companies. Accordingly, the first task was collection of books, journals, private and government news papers, internet browsing and searching literatures on related topics; and development of the literature review.

1.6.2. Data Sources and Collection Techniques

The study used primary and secondary data collection through checklists and structured interviews of professionals and relevant stakeholders to investigate insurance coverage practices and forward possible recommendations. Primary data were collected from Insurance Companies documents and through discussions with informants. Secondary data are collected from annual reports, journals, literatures

and relevant books. The qualitative data are collected by internal or key informants and interviews with concerned authorities.

1.6.3. Summary of the Research Process

This section describes the research process from the start to the end. The section explains the step by step methodology I used in order to answer the research question. In the first step, the objectives and scope of the study were determined; the second step consisted of formulating the research question. Following the research question, an appropriate research design was selected for this specific study. Then a literature review was performed in parallel with the data collection in order to provide a theoretical background connected to the research topic. The two last steps consisted respectively of data analysis and the discussions of results and recommendations. The process of my research can be illustrated as follow:

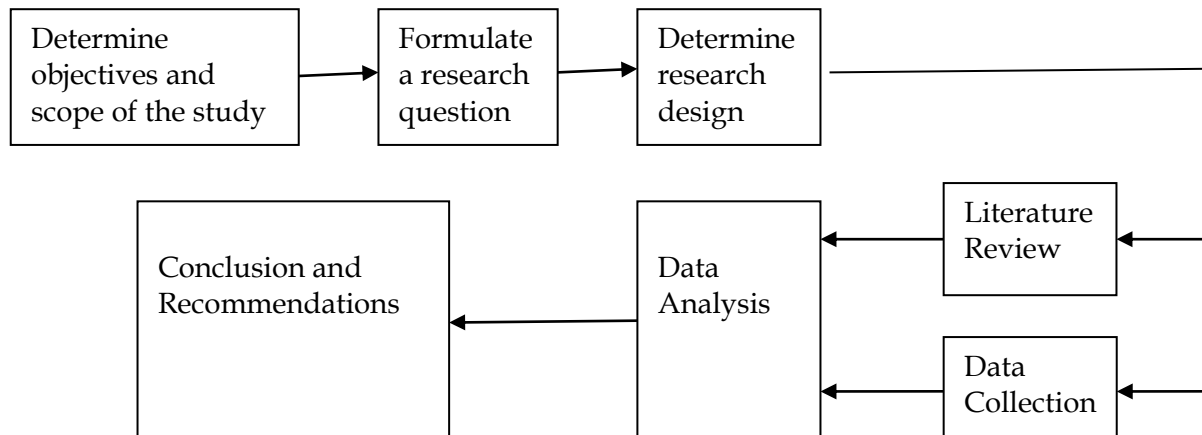


Figure 1-1. Process of the Research

1.6.4. Organization of the Study

The study is organized in to four chapters. The first chapter is concerned about introduction of the study associated with background, Objective of the study, Significance of the study, Scope and Limitations of the study, and Research Design and Methodology. The second chapter reviews related literatures. The third chapter is about Data Presentation, Analysis and Interpretation. The fourth and last chapter is concerned about Conclusions and Recommendations. And finally lists of bibliography, lists of questionnaires are attached with this paper.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. DIFFERENT CONCEPTS AND DEFINITIONS OF RISK

Risk is incorporated into so many different disciplines from insurance to engineering to portfolio theory that it should come as no surprise that it is defined in different ways by each one. It is worth looking at some of the distinctions:

Risk is actually a measure of the amount of uncertainty that exists. It's directly tied to information, as shown Figure 2.1 below. This is not exactly the way most of us think about risk in everyday situations. However, in the world of project management, risk relates primarily to the extent of your ability to predict a particular outcome with certainty.

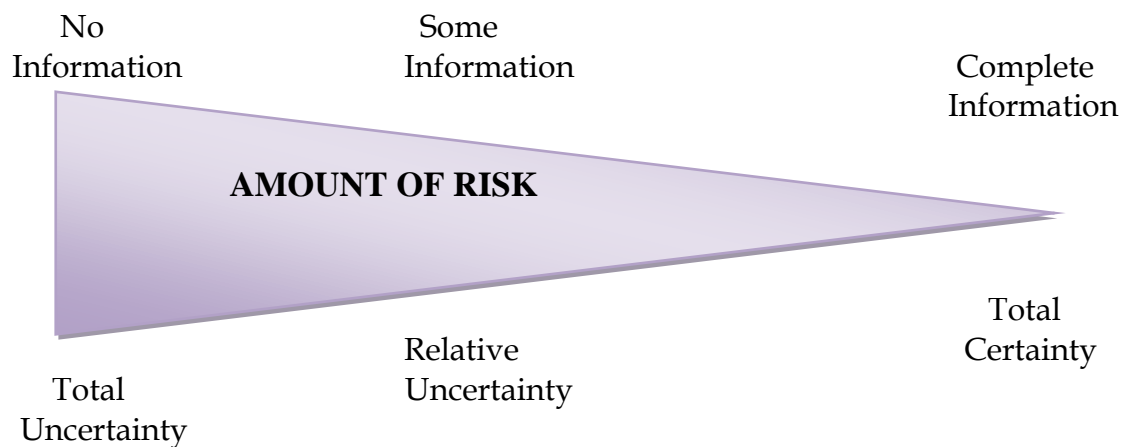


Figure2-1. Risk Relationship between information and Uncertainty

(Source: EiABC, Lecture Note)

2.1.1. Concepts of Risk

2.1.1.1. Risk versus Probability

While some definitions of risk focus only on the probability of an event occurring, more comprehensive definitions incorporate both the probability of the event occurring and the consequences of the event. Thus, the probability of a severe

earthquake may be very small but the consequences are so catastrophic that it would be categorized as a high-risk event.

2.1.1.2. Risk versus Threat

In some disciplines, a contrast is drawn between risk and a threat. A threat is a low probability event with very large negative consequences, where analysts may be unable to assess the probability. A risk, on the other hand, is defined to be a higher probability event, where there is enough information to make assessments of both the probability and the consequences.

2.1.1.3. All outcomes versus Negative outcomes:

Some definitions of risk tend to focus only on the downside scenarios, whereas others are more expansive and consider all variability as risk. The engineering definition of risk is defined as the product of probability of an event occurring, that is viewed as undesirable, and an assessment of the expected harm from the event occurring.

$$\text{Risk} = \text{Probability of an accident} * \text{Consequence in lost money/deaths}$$

In contrast, risk in finance is defined in terms of variability of actual returns on an Investment around an expected return, even when those returns represent positive outcomes.

Building on the last distinction, we should consider broader definitions of risk that capture both the positive and negative outcomes [3].

2.1.2. Types of Risks based on Insurability

Insurance involves pooling funds from many insured entities (known as exposures) to pay for the losses that some may incur. The insured entities are therefore protected from risk for a fee, with the fee being dependent upon the frequency and severity of the event occurring. In order to be an insurable risk, the risk insured against must meet certain characteristics. Insurance as a financial intermediary is a commercial enterprise and a major part of the financial services industry, but individual entities

can also self-insure through saving money for possible future losses. Based on insurability we may divide risk into Insurable risk and Non-insurable risks.

2.1.2.1. Insurable Risks

Insurance is the equitable transfer of the risk of a loss from one entity to another in exchange for payment. It is a form of risk management primarily used to hedge against the risk of a contingent, uncertain loss.

An insurer, or insurance carrier, is a company selling the insurance; the insured, or policyholder, is the person or entity buying the insurance policy. The amount of money to be charged for a certain amount of insurance coverage is called the Premium. Risk management, the practice of appraising and controlling risk, has evolved as a discrete field of study and practice.

The transaction involves the insured assuming a guaranteed and known relatively small loss in the form of payment to the insurer in exchange for the insurer's promise to compensate (indemnify) the insured in the case of a financial (personal) loss. The insured receives a contract, called the Insurance Policy, which details the conditions and circumstances under which the insured will be financially compensated.

a) Property Insurance

Property insurance provides protection against risks to property, such as fire, theft or weather damage. This may include specialized forms of insurance such as fire insurance, flood insurance, earthquake insurance, home insurance, inland marine insurance or boiler insurance. The term *property insurance* may, like casualty insurance, be used as a broad category of various subtypes of insurance, some of which are listed below:-

Aviation insurance: - protects aircraft hulls and spares, and associated liability risks, such as passenger and third-party liability. Airports may also appear under this subcategory, including air traffic control and refueling operations for international airports through to smaller domestic exposures.

Boiler insurance: - (also known as boiler and machinery insurance, or equipment breakdown insurance) insures against accidental physical damage to plant, equipment or machinery.

Builder's risk insurance: - insures against the risk of physical loss or damage to property during construction. Builder's risk insurance is typically written on an "all risk" basis covering damage arising from any cause (including the negligence of the insured) not otherwise expressly excluded. Builder's risk insurance is coverage that protects a person's or organization's insurable interest in materials, fixtures and/or equipment being used in the construction or renovation of a building or structure should those items sustain physical loss or damage from an insured hazard.

Earthquake insurance: - is a form of property insurance that pays the policyholder in the event of an earthquake that causes damage to the property. Most ordinary home insurance policies do not cover earthquake damage. Earthquake insurance policies generally feature a high deductible. Rates depend on location and hence the likelihood of an earthquake, as well as the construction of the home.

Fidelity bond: - is a form of casualty insurance that covers policyholders for losses incurred as a result of fraudulent acts by specified individuals. It usually insures a business for losses caused by the dishonest acts of its employees.

Flood insurance: - protects against property loss due to flooding. Many U.S. insurers do not provide flood insurance in some parts of the country. In response to this, the federal government created the Program which serves as the insurer of last resort.

Home insurance or homeowners insurance: - (often abbreviated in the real estate industry as HOI) provides coverage for damage or destruction of the policyholder's home. In some geographical areas, the policy may exclude certain types of risks, such as flood or earthquake that require additional coverage. Maintenance-related issues are typically the homeowner's responsibility. The policy may include inventory, or this can be bought as a separate policy, especially for people who rent housing. In some countries, insurers offer a package which may include liability and legal

responsibility for injuries and property damage caused by members of the household, including pets.

Marine insurance and marine cargo insurance: - covers the loss or damage of vessels at sea or on inland waterways, and of cargo in transit, regardless of the method of transit. When the owner of the cargo and the carrier are separate corporations, marine cargo insurance typically compensates the owner of cargo for losses sustained from fire, shipwreck, etc., but excludes losses that can be recovered from the carrier or the carrier's insurance. Many marine insurance underwriters will include "time element" coverage in such policies, which extends the indemnity to cover loss of profit and other business expenses attributable to the delay caused by a covered loss.

Terrorism insurance: - provides protection against any loss or damage caused by terrorist activities. In the United States in the wake of 9/11, the Terrorism Risk Insurance Act 2002 (TRIA) set up a federal program providing a transparent system of shared public and private compensation for insured losses resulting from acts of terrorism. The program was extended until the end of 2014 by the Terrorism Risk Insurance Program Reauthorization Act 2007

Volcano insurance:- is a specialized insurance protecting against damage arising specifically from volcanic eruptions.

Windstorm insurance: - is insurance covering the damage that can be caused by wind events such as hurricanes.

b) Liability Insurance

Liability insurance policy is an insurance product to protect the insured from third party liability for unexpected personal injury or property damage resulting from the insured's negligent behavior or the behavior of those for whom the insured is responsible and will not apply to results of willful or intentional acts by the insured.

The protection offered by a liability insurance policy is dual: a legal defense in the event of a court case commenced against the policyholder and indemnification (payment on behalf of the insured) with respect to a settlement or court verdict.

Liability for professional services is usually not covered by general liability policies. Rather, the insurance industry has responded to coverage demands of architects and engineers through the errors and omissions policy. The activities of design professionals are far reaching. Whether a particular activity constitutes a “professional service” is a question of fact. Not all activities of Architects and Engineers are professional services. As well, non-Architects and non-Engineers (such as Technicians and Draftspersons) may carry out activities which would be categorized as a professional service.

c) Life Insurance

Life assurance provides a monetary benefit to a decedent's family or other designated beneficiary, and may specifically provide for income to an insured person's family funeral and other final expenses. Life assurance policies often allow the option of having the proceeds paid to the beneficiary either in a lump sum cash payment or annuity. In most states, a person cannot purchase a policy on another person without their knowledge.

Annuities provide a stream of payments and are generally classified as insurance because they are issued by insurance companies, are regulated as insurance, and require the same kinds of actuarial and investment management expertise that life assurance requires. Annuities and pensions that pay a benefit for life are sometimes regarded as insurance against the possibility that a retiree will outlive his or her financial resources. In that sense, they are the complement of life insurance and, from an underwriting perspective, are the mirror image of life insurance.

Certain life assurance contracts accumulate cash values, which may be taken by the insured if the policy is surrendered or which may be borrowed against. Some policies, such as annuities and endowment policies, are financial instruments to accumulate or liquidate wealth when it is needed.

2.1.2.2. Non-insurable risks

There are risks which an underwriter will either refuse to insure, or for which the premium demanded would be prohibitive. These disasters are mainly from “Acts of God”. Such cases arise in the following circumstances:

- Where the chances against a loss occurring are too high or, in other words, where the risk is seen as more of a certainty than reasonable chance. Examples are losses made through speculative trading or because of disadvantageous changes in foreign exchange rates.
- Where the insurer is not able to spread its risk over a sufficient number of similar risks.
- Where the insurer does not have access to sufficient data from the past to be able to quantify the future risk.
- Where the insured would stand to gain as a result of a claim. Except in some forms of personal insurance, the principle of insurance is to attempt to reinstate the insured's position to that which existed before the loss event. A person cannot, for example, expect to benefit personally from a claim for loss or damage to property not belonging to him or her (property in which he or she has no insurable interest).

These items must, therefore, be excluded from the insurance portfolio. In some cases, other commercial remedies might exist for offsetting the risks.

Non-insurable risks are generally having catastrophic nature and individual losses are severe enough to bankrupt the insurer; insurers may prefer to limit their exposure to a loss from a single event to some small portion of their capital base. Even in the well developed country like the United States, flood risk is insured by the federal government. In commercial fire insurance, it is possible to find single properties whose total exposed value is well in excess of any individual insurer's capital constraint. Such properties are generally shared among several insurers, or are insured by a single insurer who syndicates the risk into the reinsurance market.

2.1.3. Risk Sharing in Construction Contracts

Risks may be allocated to one of the Contracting parties as described below:

- ✓ Clients
 - fail to get their physical infrastructures on time due to excessive delays
 - suffer in getting extra budgets due to cost overruns
 - Suffer excessive operation and maintenance costs due to quality related problems when completed
 - and others
- ✓ Contractors loss reputation (sustainable work) and incomes (sometimes their profits) due to:
 - excessive price fluctuations
 - suspensions and substantial disruption causing idle manpower and machineries
 - reworks resulting from quality related problems of suppliers and workmanship
 - scarcity of construction materials
 - lack of capacity to respond to excessive construction works

During a Construction Contract disputes may arise between the parties for the following reasons

- Inadequate and incomplete contract documentation,
- Drawing up an improper contract-style,

- Improper tender styles,
- Unreasonable risk burden on one of the parties,
- Improper personnel for the Project,
- The risk burden which arises from the Contract on the Party who is inadequate for this risk,
- Bankruptcy of one of the Parties,
- Coordination problems arising where more than two parties,
- Particularly settling indefinite conditions in the Contract that amending the conditions in the standard form of the Contract cause unreliable interpretations,
- Transferring assessment of the decisions with indefinite Sub-Clauses to one of the Parties or Both Parties,
- Determining methods instead of determining the Parties who are liable to provide the required results,
- Insufficient architectural and engineering drawings or designs.

The purpose of the Construction Contract is to ensure a fair distribution of risks between the parties, determining the parties' rights, duties, responsibilities and obligations in advance. Not to fulfill duty and responsibility of one of the parties, because his own insufficiency, negligence, fault or any influence of an external event will break the balance of risk.

A Construction Contract is an equalization of accepting between controllable and uncontrollable risks with the price deemed appropriate to undertake this work by the Covenant. Price of the work at least partially reflects the risk of this work deemed by the Contractor to execute the Work. Contractual agreements should be concluded taking into account who will burden how much risk.

The standard forms of Construction Contracts such as FIDIC and PPA Contracts, with the help of the conditions stated clearly in the Contract share the risk between the parties. However, the management of this risk distribution may differ. Standard Forms of Contracts being used in the construction industry generally contain most of the risks and certify reconciliation between the parties.

Fair and Balanced Risk Allocation

It is said that both FIDIC Contract form and PPA Contract documents are drafted so as to allocate the risk to the contracting parties in a fair manner using the following principles:

- The party who can best manage the risk, takes such risk
- Risks for which neither the Employer nor the Contractor can control, is in principle taken by the Employer as the initiator of the project.

2.1.4. Construction Risk Management

Construction is a very risky business, for both the Owner and the Contractor. Part of the challenge is trying to place the risk in the hands of the party that can best manage that risk. That's why an owner hires a contractor to begin with—to shift the risks for the construction cost, time, quality, and safety over to someone trained to manage them. Once the risks are identified, understood, and analyzed, proper allocations can be made for reasonable schedules, estimates, and management plans [7].

2.1.4.1. Risk Identification (Identifying what threat exists)

Identify all significant uncertainties (sources of risk), including specific threats (also called potential problems or risk events) that could occur throughout the life of the project.

2.1.4.2. Risk Assessment

Risk probability assessment investigates the likelihood that each specific risk will occur. Risk impact assessment investigates the potential effect on a project objective such as schedule, cost, quality, or performance, including both negative effects for threats and positive effects for opportunities.

Probability and impact are assessed for each identified risk. Risks can be assessed in interviews or meetings with participants selected for their familiarity with the risk categories on the agenda. Project team members and knowledgeable persons external to the project are included.

The level of probability for each risk and its impact on each objective is evaluated during the interview or meeting.

Explanatory detail, including assumptions justifying the levels assigned, are also recorded. Risk probabilities and impacts are rated according to the definitions given in the risk management plan. Risks with low ratings of probability and impact will be included within the risk register as part of the watch list for future monitoring.

2.1.4.3. Risk Evaluation

After the risks have been identified and properly registered, they must be evaluated in terms of the probability of occurrence and impact. There is a range of options for measurement of risks in construction projects. In very preliminary stages of project development, when project data is lacking, a qualitative approach might be employed. Brainstorming, risk checklist, risk register, rating major risks according to their perceived impact on budget or schedule (such as *High, Moderate*, are examples of qualitative risk measurement.

The risk estimation or assessment process is the vital link between systematic identification of risks and rational management of the significant risks (Chapman, 2001). An understanding of the possible effects on project objectives is needed: since most projects have only a limited amount of resources to use for risk management, concentration on only the major risks is essential (Baccarini & Archer, 2001). Reliable estimates of likelihoods and consequences are needed for prioritization.

2.1.4.4. Risk Treatment

The outcome of risk assessment is a quantified risk register and possible impact of risk factors on main project objectives (cost, schedule and performance). Some risk assessment exercises are considered complete at this stage. The risk team is now aware of the major risk factors and they embark on the execution of project with that knowledge. It is strongly recommended however that the risk analysis process be a continuous process during the project life cycle (Chapman, 2002). As a minimum, a formal risk mitigation effort should be administered and implemented so as to make the earlier effort worthwhile. Risk response planning and mitigation efforts may

require that agencies set policies, procedures, goals, and responsibility standards. Formalizing risk mitigation and planning throughout a highway organization will help establish a risk culture that should result in better cost management from planning through construction and better allocation of project risks that align teams with Client-oriented performance goals. It is usually recommended if the team members are the same individuals that took part in the assessment process. It is possible that because of the insight gained during the assessment process; however, new individuals may also be added to the mitigation team. Likewise, some members may not be invited to mitigation if their area is sufficiently covered by others.

Steps of Mitigation Process: The first step is prioritization of risk factors listed in the risk register. Dealing with a large number of risk factors is not efficient and the team's effort should be concentrated on tackling major issues facing the project. The risk assessment exercise has quantified each risk, so it would be easy to rank the risks in terms of their effect on cost and schedule. One approach is to rank the risks according to their expected values (average values). Another approach gives more weight to the ability of each risk factor to vary the total cost and hence may rank the risks according to their standard. After the most important risks and opportunities are ranked, each risk factor should be carefully evaluated and mitigation measures should be planned. Often, a mitigation measure has a price. This will mean that deflecting a risk or realizing an opportunity may have upfront costs. These should be carefully calculated. Also, sometimes there is uncertainty associated with some mitigation measures. Because of this, a probability of success should be considered for the realization of a mitigation measure.

The following range of options is available to the owner according to risk literature [9]:

- **Accept the risk** – Sometimes the nature of the risk is such that the most effective way is to accept its existence and absorb the consequences. As an example, project contingency is meant to counter some of these risks.
- **Reduce the risk** – Often, while it is impossible to eliminate a risk, the owner can reduce the adverse effect of risk. As an example, if ground conditions are critical

to a project, the owner may spend money to treat the ground before starting the construction. There is some upfront cost but it is hoped that the money spent is less than justified in the face of larger risk of constructing in untreated ground. Despite the implementation of the mitigation measure, there still may be some chance that the treating does not work, hence probability of success of the mitigation measure should be estimated and considered also.

- **Share the risk** – Sharing the risk could be considered in a variety of situations. As an example, in dealing with utility companies for utility relocation in infrastructure projects, the owner may be able to negotiate a limit for the cost of utility relocations. Sharing the risk also involves Allocating ownership to a third party who is best able to capture the opportunity for the benefit of the project or capable of managing the risk. Examples include: forming risk-sharing partnerships, teams, joint ventures, etc.
- **Transferring the risk** –Risk transfer requires shifting the negative impact of a threat, Along with ownership of the response, to a third party. An example would be the team transfers the financial impact of risk by contracting out some aspect of the work. Risk transfer reduces the risk only if the contractor is more capable of taking steps to reduce the risk and does so. Risk transfer nearly always involves payment of a risk premium to the party taking on the risk. Transfer tools can be quite diverse and include, but are not limited to the use of: insurance, performance bonds, warranties, guarantees, incentive/disincentive clauses, A+B Contracts, etc.
- **Avoiding the risk** – Involves changing the project plan to eliminate the risk or to protect the project objectives (time, cost, scope, quality) from its impact. The team might achieve this by changing scope, adding time, or adding resources (thus relaxing the so-called “triple constraint”). Some negative risks (threats) that arise early in the project can be avoided by clarifying requirements, obtaining information, improving communication, or acquiring expertise.

2.1.5. Reinsurance Market

Sometimes it will be beyond the insurer's financial capability to compensate for insured parties, for instance insurance for plane & ship, in such a case insurance companies will sell policies to other insurance. Such insurance company is said to be reinsurance companies.

Reinsurance companies are insurance companies that sell policies to other insurance companies, allowing them to reduce their risks and protect themselves from very large losses. The reinsurance market is dominated by a few very large companies, with huge reserves. A reinsurer may also be a direct writer of insurance risks as well.

2.2.CONSTRUCTION PROJECT RISK CATAGORIZATION AND ALLOCATIONS UNDER MDB-FIDIC & PPA (2011) CONDITIONS OF CONTRACTS

To go with the project risk categorization framework and discussions of the risk allocations in the above mentioned general conditions of contracts, discussions are made in the same order as listed in the framework [5].

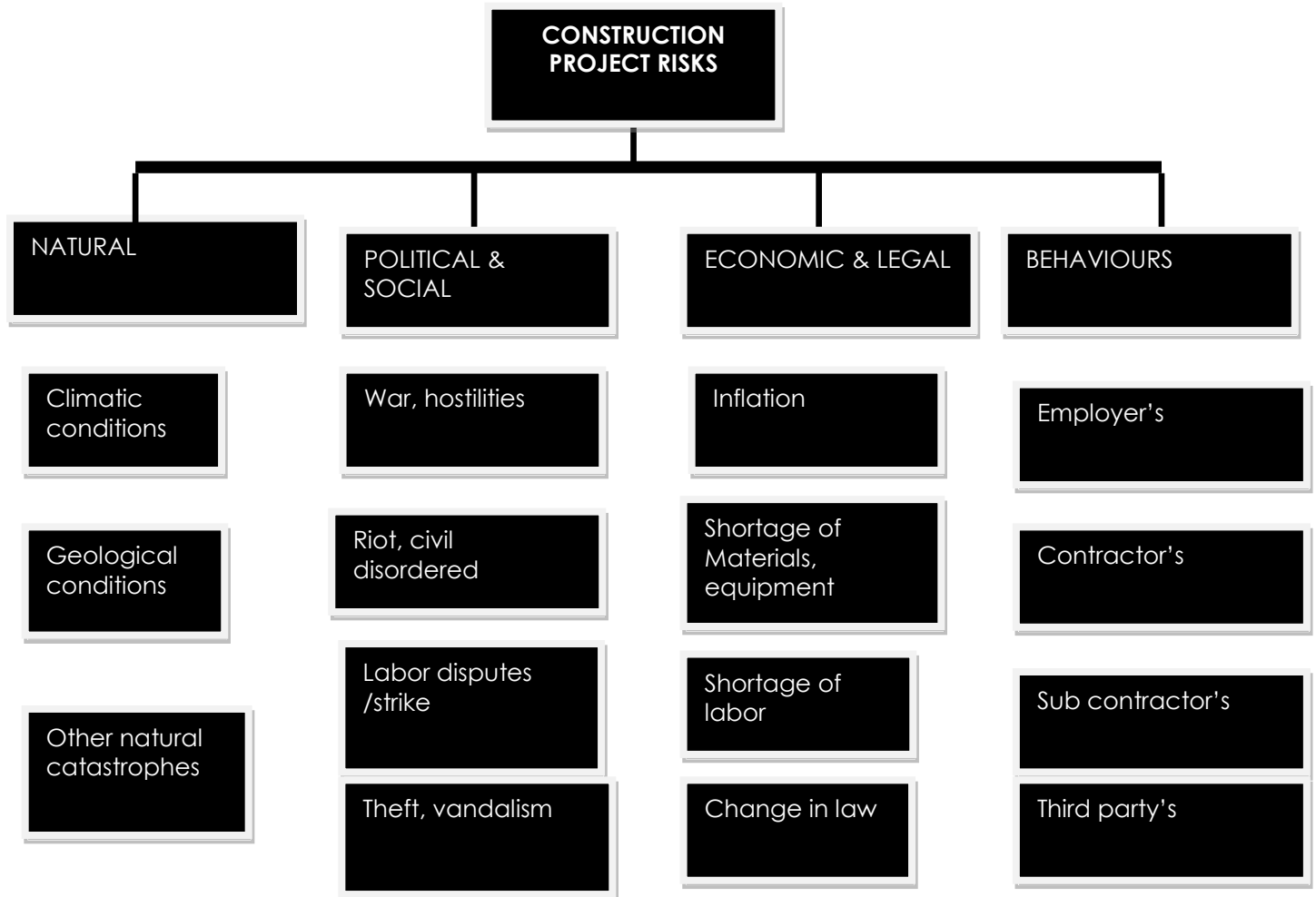


Figure 2-2 Risk categorization frame work

(Source: Han and Diekmann (2001) (Cited in ZHANG Shuibo, ZHANG Le, GAO Yuan School of Management, Tianjin University, Tianjin 300072, People's Republic of China, p.37))

2.2.1. Risk allocations under MDB-FIDIC condition of contracts

a) Natural Risks

There are several clauses in FIDIC Conditions of Contract that deal directly with the natural risks. *Sub-clause 8.4* specifies in express terms that risks concerning the climatic conditions are shared between the Employer and the Contractor, in that the Employer shall allow an Extension of Time (EOT) if exceptionally adverse climatic conditions affect the Contractor's construction progress. This also implies that the Contractor shall bear the relevant costs incurred by him due to such risks. It also implies that under "normal" adverse climatic conditions, such rainy or cold days, the Contractor shall bear the corresponding responsibility. However, according to **Sub-clause 17.3 (Employer's Risks)**, and *Sub-clause 17.4 (Consequences of Employer's Risks)*, the Contractor shall be entitled to EOT and cost compensation in case of "unforeseeable natural forces", which may include some climatic conditions, particularly when such forces turn out to be the catastrophes, such as typhoon, hurricane, etc. *under Sub-clauses 19.1 (Definitions of Force Majeure) and 19.4 (Consequences of Force Majeure)*. Concerning geological conditions, *Sub-clauses 4.12 (Unforeseeable Physical Conditions) and 4.24 (Fossils)* specify that the Contractor shall be allowed an EOT and compensated for the costs incurred from such risk events. However, the term "unforeseeable conditions", which are of an ambiguous nature, blurs the division of risks between the Employer and the Contractor. Other natural catastrophes, which are extreme natural events, such as *earthquakes and volcanic activities* are also mostly allocated to the Employer under *Sub-clauses 19.1 and 19.2*.

In *Sub-Clause 4.12 (Unforeseeable physical conditions)*, "physical conditions" means natural physical conditions and manmade and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions. If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable. This is the Contractor's favorite clause and it is more the gateway of

claim than the causal factor of claim itself, however, not all unforeseeable conditions are claimable.

It can be seen from the above analysis that the natural risks are basically shared by the two parties under FIDIC Form. *Regarding "extreme" natural catastrophes, the Employer takes most of the consequences, i.e., EOT and additional cost with the Contractor taking the loss of profit; however, the Contractor takes most of the consequences, i.e., additional cost uncompensated and loss of profit, with the Employer taking the risk of EOT, relating to exceptionally adverse climatic conditions; as for "normally" adverse climatic and geological conditions, the Contractor takes almost all the consequences except for the ones that are justified to be "reasonably Unforeseeable by the Contractor by the date for submission of the Tender (Sub-clause 1.1.6.8)".*

b) Political and Social Risks

Under *Sub-clause 17.3 (Employer's Risks)* and *Clause 19 (Force Majeure)*, *most of the political and social risks are basically allocated to the Employer*, such as war, civil commotions, disorders and strikes. In case of occurrence of such risk events that impact the Contractor's project execution, the Employer shall both allow an EOT and pay cost compensation (but no profit) to the Contractor.

Some Social risks, such as theft and vandalism, are allocated to the Contractor under the FIDIC Form. Although these are not expressly stated under FIDIC Form, it can be inferred from *Sub-clause 17.2 (Contractor's Care of Works)*, in which it is stated that the Contractor shall take the responsibility for the care of the Works and the Goods during the construction period, and that the Contractor shall rectify the loss or damages at his own cost and risk.

c) Economic and Legal Risks

Economic risks occur frequently during construction period, particularly the fluctuation of prices of materials, labor and equipment. Under *Sub-clause 13.8*, an adjustment Formula is given to deal with this issue:

$$P_n = a + b L_n + c E_n + d M_n + \dots$$

$$L_o \quad E_o \quad M_o$$

This formula applies both to the rise and fall of the prices. P_n is the adjustment multiplier; "a" is a fixed coefficient; "b", "c", "d"... are coefficients representing the estimated proportion of each cost element; " L_n ", " E_n " and " M_n "... are the current cost indices or reference prices for period "n" while " L_o ", " E_o " and " M_o "...are the base cost indices on the Base Date, which is defined as "the date 28 days prior to the latest date for submission of the Tender (*Sub clause 1.1.3.1*)". The fixed coefficient "a" represents the non-adjustable portion in the contractual payments. Such a provision indicates that the *risk of inflation is shared between the Employer and the Contractor*. Shortage of labour, materials and equipment is also dealt with under the FIDIC Form to some extent; if such shortage is reasonably unforeseeable, the Contractor is entitled to an EOT under *Sub-clause 8.4*. However, *under Sub-clauses- 4.1 and 6.1*, it is the Contractor's obligation to "provide all Contractor's personnel, Goods..." and the Contractor shall "make arrangements for the engagement of all staff and labour... and for their payment...". It can be inferred from such provisions that the Contractor shall bear all the consequences of the risks of unavailability of the required personnel, materials and equipment, except for allowed EOT in case of unforeseeable shortage.

Legal risks refer to the changes in legislation or introduction of new laws after the Base Date of the contract. It is provided that *in Sub clause 13.7*-Adjustments for Changes in Legislation that the Contractor is entitled to an EOT and additional cost caused as a result of the changes in the laws. Therefore, under FIDIC Form, such legal change risks are basically retained by the Employer.

d) Behavioral Risks

Behavioral risks are defined in this paper as those caused by one party's action or inaction that adversely impacts the project or other parties. Risks caused by the behaviors of the parties under the FIDIC form are summarized as follows:

(a) Employer's Behavioral Risks (including Engineer's)

- Late giving possession of Site (2.1)
- Non-notification of financial arrangements upon request (2.4)
- Delay in payment (14.8, 16.2)
- Unreasonably withholding permissions or certificates (1.3)
- Defects in design drawings (17.3)
- Occupation of the Works (17.3)
- Notifying incorrect setting-out data (4.7)
- Late issuance of design drawings or instructions (1.9) *Cum* Commencement of Works (8.1)
- Late attendance to tests or inspections (9.2)
- Interference with tests on completion (10.3)

(b) Contractor's Behavioral Risks

- Labor injuries and accidents (4.1)
- Improper interference with the convenience of the public (4.14)
- Damage caused by transportation of goods (4.16)
- Acts or defaults by subcontractors (4.4)
- Defects in Materials, Plant and Workmanship (7.1, 7.5)
- Accuracy of translation of the Language of the Contract

(c) Risks Caused by Third Party's Behaviors

- Unauthorized entry (4.22)
- Delay caused by Authorities (8.5)

Under the FIDIC Form, the Employer is responsible for his own behavioral risks, including the risks of Engineer who acts on the Employer's behalf, and the Contractor is responsible for his own risks, including those of the Sub-Contractor, as between the Employer and the Contractor, except for Nominated Subcontractor.

2.2.2. Risk allocations under PPA (2011) Conditions of Contract and Applicable Laws

Compared with the FIDIC Form, PPA is rather concise and detailed. This characteristic is also reflected in its risk allocation clauses. The following is a brief summary of risk allocations in PPA Conditions of Contract.

a) Natural Risks

Article 18 (Force Majeure) of PPA states that the Contractor shall be entitled to *Extension of Time (Sub-Clause 18.6)* and reimbursement (*Sub-Clause-18.7*) for additional costs reasonably and necessarily incurred because of Force Majeure. *Civil Code Article 3276 (3 (Risks of Loss or deterioration))* confirms this. This implies that the Employer is the risk bearer. But, for situations related to *Sub-article 18.2* of the Contract document and *Civil Code 1792(b) and 1794*, the Contractor retains most of the risks caused by Force Majeure.

Art. 1792. - Force majeure.

- a. Force majeure results from an occurrence which the debtor could normally not foresee and which prevents him absolutely from performing his obligations.*
- b. Force majeure shall not exist where the occurrence could normally have been foreseen by the debtor or where it renders more onerous the performance by the debtor of his obligations.*

Art. 1793. -- Cases of force majeure.

The following occurrences may, according to the circumstances, constitute cases of force majeure:

- (a) the unforeseeable act of a third party for whom the debtor is not responsible; or*
- (b) an official prohibition preventing the performance of the contract; or*
- (c) a natural catastrophe such as an earthquake, lightning or floods; or*
- (d) international or civil war; or*
- (e) the death or a serious accident or unexpected serious illness of the debtor.*

Art. 1794. - Absence of force majeure.

Unless otherwise expressly agreed, the following occurrence shall not be deemed to be cases of force majeure:

- (a) a strike or lock-out taking place in the undertaking of a party or affecting the branch of business in which he carries out his activities; or*
- (b) an increase or reduction in the price of raw materials necessary for the performance of the contract; or*
- (c) the enactment of new legislation whereby the obligations of the debtor become more onerous.*

Art. 3276. — 3. Risks of loss or deterioration.

- (1) Destructions or damage resulting from force majeure shall be borne by the contractor so long as the works have not been provisionally accepted by the administrative authorities.*
- (2) The general clauses and conditions may derogate such rule.*
- (3) In such case, they shall fix the amount of the right to compensation of the contractor as well as the conditions regarding the form and time of his claim.*

Art. 3277. — Period of warranty — 1. Nature

- (1) The period of warranty is a period during which the administrative authorities have the possibility of controlling the proper performance of the works before their final acceptance.*
- (2) Its duration shall be fixed by the contract.*

Art. 3278. — 2. Effect

- (1) During the period of warranty, the contractor shall maintain the works.*
- (2) He shall be liable for defects and shall repair them when he receives from the administrative authorities a requisition order to this effect.*

According to *Clause 73 (Extension of Intended Completion Date)*, the Contractor is entitled to Extension of Time for adverse weather condition. But, according to *Clause 44 (Exceptional Risks)*, Weather conditions shall not entitle the Contractor to claims for additional payment. Hence, however Employer takes the risk of Extension of Time; the Contractor retains most of the risks like the additional cost incurred and loss of profit.

According to *Sub Clause 44.1*, if during the execution of the works the Contractor encounters artificial obstructions or physical conditions which could not reasonably have been foreseen by an experienced Contractor, and if the Contractor is of the opinion that additional costs will be incurred and/or an extension of the period of implementation of the tasks will be necessary as a result of this, he shall give notice to the Engineer in accordance with *GCC Clauses 69 (Claims for Additional payment) and/or 73 (Extension of intended Completion Date)*. The Contractor shall specify in such notice the artificial obstructions and/or physical conditions, giving details of the anticipated effects thereof, the measures he is taking or intends to take and the extent of the anticipated delay in or interference with the execution of the works. As *Sub Clause 39.2 (Indemnification and Limitation of Liability)*, the Contractor's liability is limited to actions, claims, losses or damages directly caused by failure to perform its obligations under the contract and shall not include liability arising from unforeseeable occurrences incidental or indirectly consequential to such failure. As in FIDIC forms, this is the Contractor's favorite clause and it is more the gateway of claim and risk for the Employer.

b) Political and Social Risks

Under *Sub-Clause 18.1 of PPA (Force Majeure)*, Risks due to International or Civil war are allocated to the Employer. In this case, additional costs incurred shall be reimbursed to the Contractor and any period within the time of Force Majeure shall be added to the Contract duration.

As of MDB-FIDIC, some Social risks, such as theft and vandalism, are allocated to the Contractor. Although these are not expressly stated under PPA, it can be inferred

from *Sub-clause 34.1 (General Obligations of the Contractor)*, in which it is stated that the Contractor shall provide all control and supervision of the works, personnel, materials, plant, equipment and all other items, whether of a temporary or permanent nature required in and for such design, execution, completion and remedying of any defects, insofar as specified in, or can be reasonably inferred from, the Contract.

c) Economic and Legal Risks

According to *clause 16 of the PPA Conditions of Contract*, risks related to Change in Laws and Regulations are allocated to the Contractor.

Clause 62 (Price Adjustment) of PPA has provided the following formula for Fluctuation in prices of Labor, Material and Equipment.

$$PA = \left[NV + A \frac{(MLI - BLI)}{BLI} + B \frac{(MMI - BMI)}{BMI} + C \frac{(MEI - BEI)}{BEI} + D \frac{(MFI - BFI)}{BFI} \right] (BC)Q$$

Risk of fluctuation of costs is shared between the Employer and the Contractor. However, under *Sub-clauses 38.1*, it is the Contractor's obligation to "provide all Contractor's personnel, Goods..." and the Contractor shall "make arrangements for the engagement of all staff and labour... and for their payment...". It can be inferred from such provisions that the Contractor shall bear all the consequences of the risks of unavailability of the required personnel, materials and equipment, except for allowed EOT in case of unforeseeable shortage as stated in *Clause 73 (Extension of Intended Completion Date)*.

The *Federal Public Procurement Directive by Ministry of Finance and Economic Development (Article 16)* clearly states about price Adjustment for fluctuation of market prices.

d) Behavioral Risks

Behavioral risks caused by the behaviors of the parties under PPA are summarized as follows:

(a) Employer's Behavioral Risks (including Engineer's)

- Prolonged suspension of work by the Engineer (Clause 20)
- Delay in Payment by the Engineer (Clauses 22 & 67)
- Late giving of Access to the Site (31)
- Poor registration of Works (Clause 79)
- Unreasonably withholding permissions or certificates (Sub-Clause 81.5-81.7)
- Defects in design drawings (Sub-Clause 30.3)
- Late issuance of design drawings or instructions (Sub-Clause 30.3)
- Late or no attendance to tests or inspections (Clause 81)

(b) Contractor's Behavioral Risks

- Labor injuries and accidents (Clause 39)
- Acts or defaults by subcontractors (Clause 14)
- Protection of Cables and Conduits (Clause 48)
- Data Protection (Clause 57)
- Defects in Materials, Plant and Workmanship (Clause 80)
- Accuracy of translation of the Language of the Contract

(c) Risks Caused by Third Party's Behaviors

- Trespassing Code of Conduct by the Sub-Contractor (36.1)
- Theft and Vandalism (34.1)
- Invalidation of Contract (Art 1808)

Under PPA also, the Employer is responsible for his own behavioral risks, including the risks of Engineer who acts on the Employer's behalf, and the Contractor is responsible for his own risks, including those of the Sub-Contractor, as between the Employer and the Contractor, except for Nominated Subcontractor.

2.2.3. Guarantees, Bonds and Compensation in Construction

Contracts

Insurance may be defined as a social device providing financial compensation for the effects of misfortune, the payments being made from the accumulated contributions of all parties participating in the scheme. It may be seen as a kind of fund, into which all who are insured will pay an assessed contributions called *premium*. In return, those insured will have the right to call on the fund for any appropriate payment should the insured events occur. Based on the above definition, it may be seen that insurance exists to combat the adverse effect of risk in day-to-day activities. (Abebe Dinku, *Journal of EAEA*, Vol 17, 200:26)

A Construction Contract should contain provisions on insurance and compensation. The insurance types and conditions must be referred in tender documents.

According to *Clauses 18 of FIDIC and Clause 40 of PPA (2011)*, the Contractor shall insure the Workmen and against the third party risks, however, if the Contractor fails to effect and keep in force any of the insurances, the Employer may effect and keep in force any such insurances. These clauses also set out the compensations to be paid by Employers and Contractors.

The first step in business is to know your business partner thoroughly. Despite that, however, for any eventualities, businessmen make it imperative to hold for some sort of security to make sure that the contractual obligations entered into are performed fully and completely on time and on budget by the business partner. Businessmen have always wanted to remain guarded against non-performance risks. In government construction contracts, the government department (Employer) is always considered solvent and, unless there is some sort of connivance, trickery, or negligence in the procurement process on the part of the governmental department, it is normally considered that the contractor will sooner or later be paid for it. This is exactly why Contractors cannot raise the defense of *exceptio non adimpleti contractus* in cases of government construction contracts. This may minimize the possible uneasiness on the contractors' side and less temptation to demanding security from a Public Employer. This does not, however, mean that the governmental department

cannot be short of money at any particular season. In fact, many times due to clearly blatant planning failures, and due, at another time, to the existing bureaucratic red tapes in the financial systems, it is not uncommon to observe contractors severely suffering from such defaults in payment. At any rate, the contractor may have to fall back to the legal mortgage under *Art.3067 of the Civil Code on Mortgages*. The legal provision provides thus:

The contractors who built the buildings or made the improvements... and the suppliers who supplied the materials...used in the improvements or buildings ... shall have priority over mortgages on such part of the proceeds of the sale of mortgaged immovable as is necessary to cover the costs of the improvements, buildings ...

In the construction industry, therefore, there are a number of security devices that are used to attain this objective. The following can be mentioned as examples: of the devices

- Performance Bonds;
- Bid Bonds;
- Advance Payment Guarantees;
- Retention Money Bonds;
- Maintenance or Defects Liability Bonds, and
- Contractor's All Risks

I will briefly discuss the aforementioned security devices as they are used in construction contracts.

2.2.3.1. Bid Security

Article 36 of the Federal Public Procurement Proclamation provides thus:

Unless otherwise provided in this Proclamation, the procuring entity shall include in the bid documents a condition that bids must be accompanied by security in the form of a deposit or bid guarantee. The amount of such security shall be sufficient to discourage irresponsible bids and shall remain within limits stated in the procurement directives.

Any bid security will be forfeited if a bidder withdraws his bid within the validity period thereof or, in the case of a successful bidder, if the bidder repudiates the contract or fails to furnish performance security, if so requested.

Furthermore, the **Council of Ministers Financial Regulations No.17/1997** provides, under **Article 2(2)** the following:

(2) "Bid Security" means a bid bond or security deposit given by a contractor to the Federal Government of Ethiopia to guarantee entry into a contract if the contract is awarded to that contractor.

As we can gather from the above-mentioned provisions, Bid Bond is used to guarantee the Procuring Entity from any loss of or damage from the withdrawal by a bidder of his bid. The question, then, is: "Once the bidder has offered his bid to the PE, is it possible to withdraw from the bid"? The answer seems to be very easy in the continental legal systems, including our legal system. This is because whilst in the Common Law system, an offer can only remain irrevocable if there is a consideration given of it, in the Civil Law system, an offer remains irrevocable without any consideration being given of it once the offer has reached him. Thus, the Basic Principles of Ethiopian Contract Law provide that if a time-bound offer is made, then, the offeror is obliged until that time will have been expired unless the offeree rejected it before the time expires. In other cases, where the offeror made a 'No time-bound offer', he/she will remain bound by the offer for a reasonable period of time within which the offeror believes the offeree can decide upon it; As soon as the reasonable time has expired, the offeror has to communicate the offeree that his/her acceptance is late and that he/she will not be bound by the offer any more.

Art.3156 of the Civil Code also confirms the assertion for Government contracting. Thus, **Art.3156** provides:

The tenderer may not withdraw or modify his tender until the allocation has been declared.

However, he may expressly limit in his tender the period for which he binds himself.

When, then, is the bidder or tenderer released from the bid? **Art.3167** provides the answer. **Art.3167** provides thus:

The designation of a provisional successful tenderer by the Office shall not conclude the contract.

It shall have as its effect the designation of the only tenderer with whom the contract may be concluded.

*It shall **release the other tenderers** from the obligations arising out of their tender.*

In other words, the PE has the right to retain until the point that it reached a decision to award the contract to a certain bidder. Once the award decision is given, the PE has the right to retain only the bid bond of the provisionally successful bidder; it is assumed that the offers by the other tenderers are rejected and, therefore, the other bidders are not any more bound by their offers.

Can the bidder, then, withdraw from the competitive bidding once he/she is in it? Yes, he/she can withdraw from the competitive bidding on the condition that he/she is willing and can afford to forfeit the amount of money indicated in the bid bond.

The amount of the bid bond should be meted out in the manner that both discourage irresponsible bidders and cover the expenses that have been incurred in the tender processes. **Art. 16.16 of the Federal Public Procurement Directives** has indicated the amount of the bid bond and the conditions for their use. Hence, bid bonds will be used when the PE uses Open Bidding, Restricted Bidding, RFP, and Two Stage bidding. The amount of the bid bond should be expressed in the bid document. Furthermore, the bid bond may be produced in cash or is a bond that is issued by a

recognized and NBE-licensed bank. A bond issued by the bank can either be a certified cheque, Letter of Credit (L/C), or Bank guaranties.

Letter of credit: A standby LC guarantees payment to the beneficiary by the issuing bank in the event of default or non-performance by the buyer (bank's customer). A standby LC could also cover performance of a construction contract, serve as an assurance to a bank that the seller shall honour his obligations. A standby LC typically is unsecured and is payable against a simple statement of default or non-performance.

2.2.3.2. Contract Security (Performance Bond)

In Construction Contracts, the Contractor's obtaining a performance security from a bank, insurance company or other third party to submit it to the Employer is common. The purpose of the security, avoid any damage suffering the Employer in case of failure of contractor in performance of contractual obligations

Art.16.25 of the Federal Public Procurement directives provides that PE should maintain a performance bond whatever sort of procurement method it might have used except for RFQ and when the procurement relates to a lease. *Art.16.25.2* further states that the successful bidder should sign the contract and produce an acceptable performance bond within 15 days of the notice of his award. The amount of the performance bond is not less than 10% of the contract price. The performance is aimed at redressing any loss of or damage to the PE arising out of the non-performance of his/her contractual duty. It should, however, be born high in mind that if the loss of or damage to the PE is assessed to be greater than what is held under the performance bond, the PE can claim for the remaining amount. If it is less, the PE is obliged to refund the balance to the contractor. Accordingly, therefore, in a construction contract, the contractor produces a performance bond with the stated amount. In case of delay by the contractor, for example, the employer will deduct 0.1% of the contract price for every day that the contractor is late until this deduction amounts to 10% of the contract price. After that the employer has the right to terminate the contract and substitute the contractor by another to complete the work.

Furthermore, the *Federal Council of Ministers Financial Regulations No.17/1997* defines contract security as follows:

5) “Contract security” means

- (a) a payment bond or a performance bond given on behalf of a contractor to the Federal Government of Ethiopia to make good on any default by the contractor under the contract by:
 - i. compensating the Federal Government of Ethiopia therefore, or
 - ii. completing the performance of the contract to the extent required by the terms and conditions of the payment bond or performance bond, or
- (b) a security deposit given by the contractor to the Federal Government of Ethiopia to secure the performance of the contract to the extent required by the terms and conditions of the contract.

2.2.3.3. Advance Payment Guarantee Bond

Sykes clearly and briefly puts the importance of advance payments in the construction industry: as follows.

There is a great demand for working capital at the commencement of a contract in order to provide plant, materials, and manpower before work starts on site. Left to his own devices, the contractor would need to provide this funding from his own resources and the cost of doing so would inevitably be a part of the contractor's tender. This requirement could in fact introduce certain inequalities between tenderers, because, for some, funding would cost more than for others. Some, indeed, might even be excluded from participation by an inability to obtain the necessary funds. The provision of advance payments by the client, when this is done, can be seen, therefore, not only as an obvious benefit to the contractor, but also as a standardization of part of the tender competition. It can also mean that the client is able to seek tenders from contractors who would not otherwise be able to submit them.

The writer, however, warns about the risk of providing money to the Contractor in advance to the Client. Thus, it is proper to seek to cover the risk by imposing on his Contractor an obligation to provide some form of security. This security produced by

the contractor in return for the advance payment advanced by the Employer is to be released only on the repayment of the advance payments. Thus, the *Civil Code provision (Article 3271)* envisages the possibility of advance payments in Government Construction Contracts. The Article provides thus:

Art. 3271. – Sums advanced by administrative authorities

- (1) The contractor may receive sums in advance from the administrative authorities in respect of the contract only after having named a guarantor or given other securities guaranteeing the reimbursement of at least half the sums advanced.*
- (2) The sums advanced shall be reimbursed at the rate fixed by the contract, by deducting them from the sums subsequently due to the contractor by way of installments or in settlement.*

Article 2(1) of the Federal Council of Ministers Financial Regulations No.17/1997 also provides the following definition of ‘advance payment’:

- (1) ‘Advance’ means a payment for which there is no exchange of value and that is to be accounted for by the recipient at some later date and does not include a progress payment made on account of, but before the completion of a contract.*

As we can read from the aforementioned provision, advance payment is a payment in advance, which must be progressively earned until the value of the work done is in balance with the payment received. If we strictly apply the rule stated under Article 3271 above, repayment is not date-related. The fact that repayment is not date-related saves the contractor from the trouble that he may encounter due to the delay in the early stages of the work; he may find himself with an obligation to start repayments of the advance payment before he has started to earn payment for his work. On the other hand, if it is related to the value of work completed, he could find that the repayment of advance payments causes “an unacceptable diminution of his monthly income as soon as he has earned it.

Be this as it may, the *Federal Public Procurement Directives* regulate, to some extent, the modality of advance payments. It provides, for example, that the advance payment in the procurement of government contracts may not exceed 30% of the contract price; so that contractors and suppliers should submit an Advance Payment Bond by way of C.P.O from a recognized bank or an unconditional bank guarantee. More importantly, *Article 16.26.3* of the same directives stipulates that domestic construction companies may also be forced to produce either an unconditional, irrevocable and payable on demand guarantee, or a conditional Advance Payment Guarantee from a recognized insurer. In addition, the contractor cannot use any advance payment made to him for the purchase of any construction machinery.

2.2.3.4. Retention of the Contractor's Money as a Guarantee

In international Construction Contracts, the Contractor's certain amount of money is usually retained against the risk of non-compliance of work on time. In order to be sure that the Contractor executes his obligations under an international Construction Contract, the Contractor shall be entitled to retain 5 or 10 % of the total contract price for a certain period such as 6 or 12 months.

In order to ensure the Contract is executed fully by the Contractor in accordance with the Contract, the Contract may provide a certain percentage of the Contract price retained by the Employer. The guarantee should be extended over an adequate anticipated period of time to cover guarantee and maintenance period requested by the Contract. Alternatively, a separate security for that period can be obtained. In MDB-FIDIC Conditions of Contract, the percentage of the money to be retained is determined in the Contract Data, and in PPA Conditions of Contract, the percentage of the money to be retained is determined in the Special Conditions of the Contract.

What is retained for a year for securing the maintenance of the work or, if released, an unconditional guarantee whose validity lasts for about a year is called Maintenance or Defects Liability Bond. This guarantee is aimed at having any defects, omissions, or inconsistencies in constructing the work mended, if the contractor, once reported to him, fails to do so.

Article 28.5 (b) of the Federal Public Procurement Directives states that the Government Department should withhold or retain 5% of each payment made as per the Consulting Engineers Certificate of Payment in any construction works. This is done as a security for the quality of the construction work. This amount is retained over and above to the Performance bond already held by the department. 50% of the retention money will be released on the completion of the work upon the provisional acceptance (discussed above) and the remaining 50% will be retained yet for the one-year period of warranty following the provisional acceptance. The directives, however, permit that the Retention Money Bond may be released to the contractor upon the production of an unconditional guarantee whose validity remains for 12 months.

2.2.3.5. Liquidated Damages for Delay and Premium Clauses

If the Contractor fails to complete the whole of the Works, and each Section (if any) within the Time for Completion, the Contractor shall, subject to notice, pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Contract Data, which shall be paid for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Contract Data. These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

Regulating, in advance, the potential damages that either of the contracting party may suffer, as the consequence of the other party's failure to perform its contractual obligations, is the order of the day in the construction industry. The contracting parties address this by incorporating a 'the Liquidated Damages Clause' to that effect.

It is worth mentioning that the provision for liquidated damages excludes the employer's right to claim additional damages even if it can show that the damage it has actually suffered exceeds the provision for liquidated damages in the contract. Therefore, it is important that the sum fixed for liquidated damages accurately reflect the extent of loss the employer will suffer if there is a delay in the performance of the contract.

In our country, the penalty clause is regulated under the *Civil Code Articles 1889-1894*, there is no rule, directly or indirectly, regulating liquidated damages clauses.

In practice, as the contractor is obliged to produce 10% of the contract price as a performance bond to the Procuring Entity, then, for each day of delay on the part of the contractor in completing the work, 0.1% of the contract price is meted out against the contractor as a penalty until the penalty amounts to 10% of the contract price; that being the Performance Bond. Thus, when the penalty amounts to 10% of the contract price, the Employer terminates the contract in addition to the appropriation of the performance bond.

As it can be easily gathered from the *Civil Code Article 1889 cum 1892*, penalty clauses are not consistent with the idea of applying the liquidated damages clause, in Common Law as a genuine pre-estimate of the loss that may be suffered by the creditor. *Articles 1889 and 1892* provide thus:

Art. 1889. – Penalty.

The parties may fix the amount of damages which will be due, should a party fail to discharge his obligations or to discharge them completely and in due time.

Art. 1892. – Actual damage.

(1) The penalty shall be due notwithstanding that no actual damage was caused to the creditor.

(2) *Damages may not be claimed above the amount of the penalty unless non-performance is due to the debtor's intention to cause damage or to his gross negligence or grave fault.*

Article 1893 of the Civil Code is also worth mentioning here in light of the discussion above.

Art. 1893. – Variation of penalty.

The agreed amount of the penalty due for non-performance may not be reduced by the court unless partial performance has taken place.

It should be clear, thus, that penalty clauses are not supposed to be ‘genuine pre-estimates of a potential loss’ as it is strongly demanded of the liquidated damages clause. Thus, even if it is an extremely exaggerated amount, the courts will give deference to it regardless of whether the creditor has suffered any or none of the damage. In fact, **Article 1892 (2)** provides that the creditor can claim above and more than the amount that is fixed in the liquidated damages clause when and if the creditor can show that non-performance was due to:

- the debtor’s intention to cause damage or
- the debtor’s gross negligence, or
- the debtor’s grave fault.

This shows that the amount fixed in the penalty clause may be exceeded if the non-performance is due to the aforementioned causes. Thus, the only remedy for the non-performing party to avoid the payment of the amount of money so fixed in the penalty clause is to invalidate it on the grounds of vitiation of consent, lesion, etc. **Article 1894 of the Civil Code**, however, establishes the ‘severability or separability’ doctrine of the penalty clause and the main contract. This is to say that the fact that the penalty clause is invalidated does not mean that the main contract is necessarily invalid. Thus, the debtor may seek for invalidating grounds (mistake, fraud, duress, motive (cause), lesion, etc) only for the ‘penalty clause’ while the main contract is maintained valid. The vice versa is not, however, true. That is, if the main contract is invalidated for any ground, the penalty clause is necessarily invalid. Note that, in contrast with the penalty clause, an arbitral clause inserted in the main contract remains valid even if the main contract is invalidated for any ground. This will

enable the contracting parties to an invalidated contract to appoint an arbitrator/ arbitral tribunal that will determine; for example, the modality for the contracting parties' reinstatement to the position they had, had the contract not been concluded. This is called the doctrine of Severability or Separability of Arbitral Clauses.

2.2.3.6. Contractor's All Risks Policy

This policy covers loss or damage from what so ever cause for the contract works or materials whilst on the contract site(s) and in use in connection with the contract during the performance of the contract and the period of maintenance. The policy is "All Risk" and is therefore all inclusive, with the exception of what are called the "Excepted Risks" (meaning not accepted).

2.2.4. Comparison of Risk Allocation under MDB-FIDIC and PPA Conditions of Contracts in Selected Clauses

Table 2-1 Comparison table

GCC Clause	Description (Modified)	Comment
Delayed Drawings or Instructions		
MDB-FIDIC 1.9	If the Engineer fails to issue the Drawings within a particular time according to the Contractor's schedule, the Employer should be responsible to give compensation to the Contractor, providing that the Contractor has followed the procedure and fulfilled the requirements by giving notice to the Engineer and within the time frame stipulated in the Contract. This Sub-Clause only mentions "within a time which is reasonable". Both parties should pay attention to this sentence as this might cause different interpretation lead to dispute.	Both Contract Documents explicitly brief that it is the Employer's obligation to provide drawings and instructions for the commencement of works. Hence, it is the Employer's risk .
PPA 30.3	Except where otherwise provided in the SCC, within 30 days of the signing of the Contract, the Engineer shall provide to the Contractor, free of charge, a copy of the drawings prepared for the implementation of tasks as well as two copies of the specifications and other contract documents. If the Engineer fails to provide these documents, the Contractor shall be Compensated according to <i>Sub Clause 73.1 (c) cum 74.1</i> .	

Compliance with Laws		
MDB-FIDIC 1.13	The parties should have the same interpretation on the “ <i>applicable laws</i> ” i.e. all regulations established by the law itself instead of the parties obligation under the contract. Parties should not only comply with the laws and regulations issued before the base date, but also to all laws and regulations issued during the course of the project. The FIDIC Contract allocate the risk of change of law to the Employer as far as such law and regulation affect the Contractor in performing their obligation, but the contractor should follow such law and regulation, and submit the notice on the incident.	<i>Sub-Clause 1.13 of FIDIC and Sub Clause 30.1 and other clauses of PPA</i> clearly specify that each party is responsible to comply with the applicable Laws”. Hence, it is both the <i>Employer’s</i> and <i>Contractor’s</i> risk to follow the applicable laws
PPA 30.1	The Contractor may request the assistance of the Public Body in obtaining copies of laws, regulations and information on local customs, orders or by-laws of the Federal Democratic Republic of Ethiopia, which may affect the Contractor in the performance of his obligations under the Contract. The Public Body may provide the assistance requested to the Contractor at the Contractor's cos.	
Right of Access to the Site		
MDB-FIDIC 2.2 Cum 4.6 Cooperation	<p>The Employer shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the Contract Data</p> <p>If no such time is stated in the Contract Data, the Employer shall give the Contractor right of access to, and possession of, the Site within such times as required to enable the Contractor to proceed without disruption in accordance with the programme submitted under Sub-Clause 8.3 [Programme]. This Sub-Clause 2.1. is the most often Sub-Clause used by the contractor as the basis of their claims.</p> <p><i>It is the Employer’s risk and Contractor’s opportunity for compensation</i></p> <p>On the other hand, <i>Sub-Clause 4.6</i> states that the Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to the Employer’s Personnel, any other contractors employed by the Employer, and the personnel of any legally constituted public authorities, who may be employed in the execution on or near the Site of any work not included in</p>	According to both Contract Documents, the Contractor is entitled to compensation if the Employer does not have access to the construction site. But, however the Contractor has the obligation to give access to the Employer’s personnel, it is not clearly stated the Contractor’s risk if he doesn’t allow these personnel access to the site.

	<p>the Contract.</p> <p>Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to suffer delays and/or to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.</p> <p><i>It is the Contractor's risk in such case</i></p>	
PPA 31	<p>Sub Clause 31.1 states that the Employer shall make the site to the Contractor in due time, if not, the Contractor shall be Compensated.</p> <p><i>In this case, it is the Employer's risk and Contractor's opportunity for compensation</i></p> <p>On the other hand, Sub Clause 31.2, articulates that the Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site. Sub Clause 31.3 also states that the Contractor shall preserve any premises placed at his disposal in a good state while he is in occupation.</p> <p><i>It is the Contractor's risk in such case</i></p>	
Unforeseeable Physical Conditions		
MDB-FIDIC 4.12	<p>In this Sub-Clause, "physical conditions" means natural physical conditions and manmade and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.</p> <p>If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable, and shall be compensated.</p> <p><i>It is the Employer's risk and Contractor's opportunity to claim</i></p>	<p>Since unforeseeable occurrences or physical conditions has no limit, it is <i>the Employer's risk and Contractor's favourite clause and it is more the gateway of claim than the causal factor of claim itself, however, all unforeseeable conditions are claimable</i></p>
PPA 44.1 Cum 39.2 (c), 69 & 73	<p>According to Sub Clause 44.1, if the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable, and shall be compensated.</p> <p>According to Sub Clause 39.2, the Contractor's liability shall be limited to actions, claims, losses or damages directly caused failure to perform its obligations under</p>	

	<p>the contract and shall not include liability arising from unforeseeable occurrences incidental or indirectly consequential to such failure.</p> <p><i>It is the Employer's risk and Contractor's opportunity to claim</i></p>	
Delay Damages (Liquidated Damages)		
MDB-FIDIC 8.7	<p>If the Contractor fails to complete the whole of the Works, and each Section (if any) within the Time for Completion, the Contractor shall, subject to notice, pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Contract Data, which shall be paid for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount shall not exceed the maximum amount of delay damages (if any) stated in the Contract Data.</p> <p><i>It is the Contractor's obligation and risk, and Employer's remedial right</i></p>	<p>PPA Standard Conditions of Contract states the percentage to be applied for penalty. MDB-FIDIC on the other hand has made it open. These damages doesn't relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract. Therefore, it is the Contractor's risk.</p>
PPA 27	<p>If the Contractor fails to carry out any or all of the Works within the period specified in the Contract, the Public Body may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages a penalty of 0.1% or 1/1000 of the value of undelivered Service for each day of delay until actual delivery or performance, The cumulative penalty to be paid by the Contractor shall not exceed 10% of the contract price.</p> <p><i>It is the Contractor's obligation and risk, and Employer's remedial right</i></p>	
Suspension of Work		
MDB-FIDIC 8.8 – 8.10	<p>The Engineer may at any time instruct the Contractor to suspend progress of part or all of the Works. If the Contractor suffers delay and/or incurs Cost from complying with the Engineer's instructions and/or from resuming the work, the Contractor shall give notice to the Engineer and shall be entitled to:</p> <ul style="list-style-type: none"> (a) an extension of time for any such delay, if completion is or will be delayed, and (b) payment of any such Cost, which shall be included in the Contract Price. 	<p>Both Contract Documents articulate that Suspension of work by the Employer or its agent makes the Contractor compensated.</p>

	<p>And, if the suspension has continued for more than 84 days, the Contractor may request the Engineer's permission to proceed. If the Engineer does not give permission within 28 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission [<i>Variations and Adjustments</i>] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of Termination.</p> <p><i>It is the Employer's risk and Contractor's opportunity for claim.</i></p> <p>But, the Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure.</p> <p><i>In this case, it will be the Contractor's risk and the Employer's remedial right.</i></p>	
PPA 20	<p>The Engineer has the right to suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary; additional expenses incurred in connection with protective measures to safeguard the works, plant, equipment and site against any deterioration, loss or damage shall be added to the contract price, unless such suspension is:</p> <ul style="list-style-type: none"> • otherwise provided for in the contract; or • necessary by reason of some default of the Contractor; or • necessary by reason of normal climatic conditions on site; or • necessary for the safety or the proper execution of the works or any part thereof insofar as such necessity does not arise from any act or default by the Engineer or the Public Body or from any of the exceptional risks. <p><i>It is the Employer's risk and Contractor's opportunity for claim unless suspension is made due to the above reasons.</i></p>	
Failure to Pass Tests on Completion and Remedy Defects		
MDB- FIDIC 9.4	<p>If the Works, or a Section, fail to pass the Tests on Completion, and fails to remedy the defect; the Employer may (at his option):</p>	Both Contract Documents state that it's the Contractor's

	<p>(a) carry out the work himself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to pay to the Employer the costs reasonably incurred by the Employer in remedying the defect or damage;</p> <p>(b) require the Engineer to agree or determine a reasonable reduction in the Contract Price; or</p> <p>(c) if the defect or damage deprives the Employer of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, the Employer shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor. <i>It is the Contractor's risk and Employer's remedial right.</i></p>	<i>risk if tests on completion fell.</i>
PPA 85	<p>Works which do not satisfy the terms and conditions of the Contract, or in the absence of such terms and conditions, which are not carried out in accordance with trade practices in the Federal Democratic Republic of Ethiopia, shall, if required, be demolished and rebuilt by the Contractor or repaired to the satisfaction of the Engineer, otherwise this shall be done as of right after due notice at the expense of the Contractor, by order of the Engineer. The Engineer may also require the demolition and reconstruction by the Contractor, or repair to the satisfaction of the Engineer, under the same conditions of work, in which unacceptable materials have been used, or carried out in the periods of suspension provided. <i>It is the Contractor's risk and Employer's remedial right.</i></p>	
Delayed Interim Payment		
MDB-FIDIC 14.8	<p>If the Contractor does not receive payment within the days specified, the Contractor shall be entitled to receive financing charges compounded monthly on the amount unpaid during the period of delay. This period shall be</p>	<p>According to FIDIC Contract forms, it seems the Contractor is Compensated for</p>

	deemed to commence on the date for payment specified, irrespective of the date on which any Interim Payment Certificate is issued.	delay of Payments. But, the interest paid for delay of payment may not cover the Contractor's damage. Therefore, delay of payment is the Contractor's risk .
PPA 67	<p>Once the time-limit referred to Interim payment has expired, the Contractor shall upon demand, submitted within two months of receiving late payment, be entitled to late-payment interest at the rediscount rate applied by the National bank of Ethiopia on the first day of the month in which the time-limit expired, plus three and a half percentage points. The interest shall be payable for the time elapsed between the expiry of the payment deadline and the date on which the Public Body's account is debited.</p> <p>Any default in payment of more than 120 days from the expiry of the period laid down shall entitle the Contractor either not to perform the Contract or to terminate it.</p>	<p>PPA Standard Conditions of Contract on the other hand has made options for the Contractor.</p> <p>Therefore, in PPA Standard Conditions of Contract, the Contractor's risk is minimum.</p>
Price Adjustment and Change in Laws & Regulations		
MDB-FIDIC 13.7 & 13.8	<p>For adjustments of Changes in Legislation, the Contractor is entitled to an EOT and additional cost caused as a result of the changes in the laws. <i>Therefore, under FIDIC Form, such legal change risks are basically retained by the Employer.</i></p> <p>For adjustment of Economic risks, an adjustment Formula is given to deal with this issue. <i>Here risk of inflation is shared between the Employer and the Contractor</i></p>	According to MDB-FIDIC Contract Forms, additional costs due to Change in Laws and Regulations is retained by the Employer. According to PPA Standard Contract Conditions on the other hand, additional costs due to Change in Laws and Regulations is retained by the Contractor.
PPA 16 & 62	<p>The Contract Price shall not be correspondingly increased or decreased and/or the Completion Date shall not be adjusted to the extent that Contractor has been affected in the performance of any of its obligations under the Contract due to change in laws and legislations. <i>Therefore, under PPA, such legal change risks are basically retained by the Contractor.</i></p> <p>For adjustment of Economic risks, an adjustment Formula is given to deal with this issue. <i>Here risk of inflation is shared between the Employer and the Contractor</i></p>	<p>Therefore, additional costs due to Change in Laws and Regulations is Employer's risk in MDB-FIDIC Contract</p>

		Forms and Contractor's risk in PPA Standard Conditions of Contract. There is risk sharing in Economic risks in both Standard Contract Documents.
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2.2.5. Ethiopian Construction Insurance Practices

Despite the advancement of insurance as a commercial business, it is little understood and exercised in the Ethiopian society in general and the construction industry in particular. Most Insurance Companies, especially the private insurance companies, are new to the business but show a remarkable development since their establishment [4].

Even though insurance is basically governed by the Insurance Policy signed among the signatory parties and the pertinent Insurance laws of the country, the basic Insurance principles of the country is considered as parts of an Insurance Policy.

According to the Ethiopian *Commercial Code (Art.675) (a code governing Insurance policies)* an Insurance policy is “a contract whereby a person called the insurer, undertakes against payment of one or more premium to pay to person, called the beneficiary, a sum of money where a specified risk materializes. Among the fundamental principles of insurance, *The Principles of Insurable Interest, Indemnity, Utmost Good Faith and Proximate Cause* are the fundamental ones.

The Principle of Utmost Good Faith

A person who applies for insurance is usually given an application form containing questions about the nature of risk. If the applicant wants insurance on property, the form will call information as to the age, the use description and condition of the

property, as well as its location and value or cost. An application for life insurance calls for such facts as to the age, occupation and habits of the applicant, any prior illness or accidents, and the health of the applicant's parents. The insurer decides to accept or not to accept the application (offer) based on the information given. The insurer decides to accept or not to accept the application (offer) based on the information giving all necessary information to the insurer. The beneficiary (the insured) must give any information within his knowledge to the insurer. In other words, the beneficiary must disclose (reveal) all relevant facts about the thing or life to be insured. Relevant facts means, facts that may help (assist) the insurer to determine the amount of premium to be charged. The information given must be true.

Failure to disclose such facts is fraud. So there must be utmost good faith regarding insurance contract.

The Principle of Insurable Interest

According to the *Commercial Code of Ethiopia (Art. 662)* any interested person, in the preservation of an object may insure it. A person who buys insurance policy must have an insurable interest in the property or in the life insured. An insurable interest is the financial interest or financial stake that a person has in the property or in the life of another or his health. Any person who would suffer a direct financial loss if certain property were damaged or destroyed has an insurable interest in such property. Such a person need not be the owner but may be someone who has a security interest. In property insurance, there are some common classes of circumstances that give rise to insurable interest. They are ownership and other rights in property, contract rights, and potential legal liability to others. Every person has insurable interest in his or her own life. A person may have an insurable interest in the life of another, if their relationship is such that an economic benefit can be expected from the continued life of another. An agreement without insurable interest is invalid because a person who has nothing to lose and everything to gain might be tempted to

cause the destruction of the insured property or the death of the insured person so that the policy holder would be entitled to the proceeds of the insurance.

The Principle of Indemnity

In the *Commercial Code of Ethiopia (Art.678)*, it is stated that contract for the insurance of an object is a contract for compensation. The compensation shall not exceed the value of the object insured on the day of the occurrence. The principle of indemnity/compensation is based on the idea that insurance is a system for distributing loss. It is not a mechanism of generating profit. Therefore, in the event of causality, an insured be limited to reimbursement (indemnity) for loss actually suffered. You may not be compensated above the loss. The value of property may be assessed on the day the policy is bought and on the day loss occurs. But the human life cannot be expressed in terms of money.

Accordingly, the principle of indemnity does not apply to life insurance policy. The amount insured may be fixed freely and shall be due regardless of the damage suffered by the insured person.

The Principle of Proximate Cause

The doctrine of proximate cause is based on the principle of cause and effect, which states that having proved the effect and traced the cause, it is not necessary to go further. In other words the law doesn't concern itself with the cause of causes. The law provides the rule -"causa proxima nonremota spectator". It means we should regard only the immediate cause not the remote or distant cause.

So we can summarize the concept into the following details. The insured peril need not be the initial cause but it must be a direct result of the operation of an excepted peril (unless the policy wording specifically overrules this).

According to this insurance policy Damage as the direct result of an insured peril is covered even though the immediate peril causing that damage is not mentioned in the policy (unless the policy specifically excludes the result); thus water or smoke damage after fire are covered. Property can be covered even though the named peril does not actually cause damage to the insured property, so long as the named peril does not operate and its results cause loss to the insure. For example, if the building next door to the insure catches fire and the only damage the insured suffers is by water or smoke, his fire policy will operate (provided the original fire was not caused by a peril named as excluded in the insured's policy). Further damage to attempts to minimize a loss already taking place, is covered. Therefore, water damage from sprinklers or firemen's hose is covered.

CHAPTER THREE

3. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Information has been gathered from three different insurance companies namely, *Awash Insurance Company, Ethio - Life & General Insurance S.C, and Africa Insurance S.CO* to assess construction related real cases they have faced through the process of insurance coverage with the insured party.

Questionnaires were distributed to the aforementioned insurance companies for the purpose of assessing construction related real cases and all questionnaires were returned.

Table 1

Type of insurance coverage given by the insurer

Type	RESPONDETS	
	Number	Percentage
Property Insurance	3	100
Liability Insurance	3	100
Life Assurance	3	100
Motor, Machinery	1	16.67

From the above data analysis result, all the respondents give coverage to all the three type of insurance. One of the respondents gives insurance coverage to motor and machinery additionally.

Table 2

Construction related services (insurance/bond

Type	RESPONDETS	
	Number	Percentage
Yes	3	100
No	0	0

From the above analysis result it can be concluded that all the three insurance companies give insurance related services.

Table 3

Type of liability insurance for construction companies to be covered

Type	RESPONDETS	
	Number	Percentage
Bonds	3	100
Professional indemnity	2	66.67
Product Liability coverage	2	66.67
Third Party	3	100
All contractor's Risk Insurance(ACR)	3	100

From the above result all the insurance companies give liability coverage to Bonds, Third party & All contractor's risk and two of the insurer companies give professional indemnity and product liability coverage in addition.

Table 4

Common type of bonds to customer

Type	RESPONDETS	
	Number	Percentage
Bid Bond	3	100
Advance Bond	3	100
Performance Bond	3	100
Retention Bond	1	33.33
Damage Liability	0	0

It is clearly shown in table 4 that Bid, Advance & performance bond are the most common type of bond given by all the respondent insurance companies, where as one of the respondent give retention bond in addition to what has been mentioned previously.

Table 5

Actual cases encountered on covering risk from the principal (Client) and /or contractor (supplier)

Type	RESPONDETS	
	Number	Percentage
Yes	2	66.67
No	1	33.33

Two of the respondents (66.67%) faced difficulty on covering risks and one of the respondents (33.3%) has never faced difficulty. The actual cases related to this table have been presented at the end of this chapter.

Table 6

The most frequent insurance claims in our country

Type	RESPONDETS	
	Number	Percentage
Damage caused by floods	0	0
Damage caused by fire	3	100
Damage caused by lighting	0	0
Damage caused by explosion	1	33.33
Damage caused by theft	2	66.67

According to Table 6 above, 100% of the respondent said that damage caused by fire is the most common type of damage in our Country, whereas damage caused by theft

and explosion are in the second & third respectively. Thus from my respondents point of view, it can be concluded that, damage caused by floods and lighting is very encouraging business for insurance companies.

Table 7

Parties bear more risk during construction process

Type	RESPONDETS	
	Number	Percentage
Contractor	3	100
Client	0	0

100% of the respondents say that contractors bear more risks during construction process, from this result we can conclude that contractors should take a great care during construction process.

3.1. ACTUAL CASE PRESENTATION

Case 1

One of my respondents (*Africa Insurance Company S.C*) faced problems related to advance and performance bonds.

The Contractor (the insured) won a bid. Accordingly, the Contractor went to the aforementioned insurance company for advance and performance bonds and get insured paying the required premium amount. And finally, the Contractor faced economic failure to precede the project as per the agreed schedule and then the Employer terminated the contract following all the required procedures.

After termination, the Employer requested the Insurance to pay compensation for the damage caused by the Contractor, and the insurer had no choice but to pay the compensation payment equivalent to the damage caused by the Contractor. Now, the case between the insurer and the insured contractor is a legal issue. The insurer claimed the Contractor to reimburse the equivalent compensation amount plus the fee for the legal process.

Case 2

According to the news by Capital on 05-Nov- 2014, Oromia Roads Authority (ORA) sued Berta Construction Plc for 77 million birr claiming the latter failed to complete the construction of a 63 Km road in Ilu Aba Bora zone.

The Authority also sued Awash Insurance S.C. as a second defendant, as the insurance firm had guaranteed Berta Construction's performance. ORA requests the firm to pay 10 million birr.

When disputes arose, the ORA and Berta Construction had initially agreed to resolve it through negotiating or by appealing to the Ministry of Urban Development and Construction before pursuing litigation according to the agreement the two parties signed. "However, due to the regulation by the Ministry of Finance and Economic and Development (MoFED) that prohibits governmental bodies from such negotiations, we filed charges against the company," the Authority states in its charges.

According to the charges ORA sued the contractor because it did not complete the construction of the road on time causing the Authority to lose millions in cost overruns. The parties entered into a contract on June 27, 2005 for the construction the 71 million birr road which Berta agreed to complete and deliver within 1050 days. The construction was supposed to be completed by March, 7, 2009. The authority finally terminated the contract on January 12, 2011.

The contractor has only completed 51 percent of the construction, the Authority indicated in its charge.

Having terminated the contract between the two parties, the Authority hired another contractor, Alemayew Ketema General Contractor for the sum of 141 million birr to complete the construction.

'If the defendant could have completed the construction on time, the Authority would not have had to spend an additional 69.6 million birr,' the ORA statement indicated. 600 additional days were also required which has made things difficult for the people in the area who were supposed to have their road completed by now, the charge reads.

According to the Authority's statement, it was paying 57, 996 per month to the consultant TOWERS Consult Plc. and as the consultant needed to serve additional 20 months due to the delay, ORA also claimed 1.2 million birr from Berta. In addition, ORA claimed 7 million birr, which according to their contract, the defendant should have paid when the contract was terminated.

CHAPTER FOUR

4. CONCLUSION AND RECOMMENDATION

The aim of this paper as I have already mentioned in the objective part (section 1.2), is to be familiar with the real application of the concept of risks under the two conditions of contract (MDB-FIDIC & PPA-2011), and the relevant applicable laws to a particular type of risk.

I have gone through detail investigation of the most common types and nature of construction related risks under the two conditions of contract, assessing insurance related actual cases in chapter three and finally, discussions among the group members followed, the following conclusions and recommendations are presented in line with the specific objectives designed to meet the main objective.

4.1. CONCLUSION

During the study, the group found that MDB- FIDIC conditions of contact for works is short, precise and easily understandable, where as our PPA-2011 conditions of contract is rather more detailed and refer to other applicable laws, like the Ethiopian Civil code,

As I have seen during my study, the Employer's risks are more mentioned than the Contractor's risks in both Standard Contract forms.

Insurable risks are covered by insurance companies through insurance policies. Non insurable risks bear by the Employer and not by the insurance companies such as earthquake, flood, etc.

In my case study, I have found that most insurance coverages practiced in Ethiopian Construction by insurance companies are bid, advance and performance bond.

4.2. RECOMMENDATIONS

On construction projects, the most challenge that need attention to improve is on insurable risks; and some of the endeavor that shall be taken in further includes,

- (a) Construction is risky business, and covers about not less than 15% of the GNP of both developed and developing countries and affects the economy of the country. Concerned bodies like MoFED and MUDHCo are required to take action to regulate the problems in connection with contractor's capacity and controlling mechanism.
- (b) Professional Associations should play a leading role in increasing awareness of the professional ethics.
- (c) Insurance companies must find ways to demonstrate more clearly to Employers and buyers the importance of various insurance policies.
- (d) Prior to implementation phase of projects, Employers have better hire advisors to check the procurement of relevant insurance policies as the condition of award of tender.
- (e) Most of the sources of delay arise from the change and clarity of Employer's design, and this shall better to be minimized in order to avoid affecting performance of the contractor and completion of the projects in time.

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ANNEXES



Addis Ababa Science & Technology University
School of Civil Engineering & Construction Technology
Department of Construction Technology & Management

Dear sir/Madam,

This is a questioner designed for a research purpose in Addis Ababa Science & Technology University at School of Civil Engineering & Construction Technology, Department of Construction Technology & Management. This will be confidential and be used only for academic purpose.

Therefore please be helpful and give me precise and correct answers to my questions. I use the responses for study purpose only and perhaps for further recommendation to minimize risk in Ethiopian Construction Industry in the future.

You are not obliged to answer questions which you do not want to. You are kindly requested to complete the questionnaire as soon as possible. Tick in the box whichever is appropriate and write the required information in the open spaces provided.

I thank you in advance for giving me your precious time.

With best regards!

Wondmenew Tsegaw



Addis Ababa Science & Technology University
School of Civil Engineering & Construction Technology
Department of Construction Technology & Management

In this questionnaire I provide some highlights of Risk in Construction Contracts so as to enable you answer the questions.

Construction is a high-risk venture. Each project is unique and has its own specific design to be constructed on a particular site within a definite timeframe, cost, materials, equipment and labor. Successful construction requires flawless functioning of the project stakeholders comprising the client, the design team, the construction team, and various trades, manufacturers, suppliers in a professional and timely manner. In spite of the client and the contractor as the contract parties, other project players are involved in the construction process. Due to the different culture, interest and organizational structure of each of them, some parties represent a risk source to other parties.

It would be impossible to enumerate all the risks which may arise during the development of construction projects, as the likelihood and unforeseen ability of accidents are sufficient factors to have them covered.

A Construction Contract is an equalization of accepting between controllable and uncontrollable risks with the price deemed appropriate to undertake this work by the Covenanter. Price of the Work at least partially reflects the risk of this work deemed by the Contractor to execute the Work. Contractual agreements should be concluded taking into account who will burden how much risk.

The standard form Construction Contracts such as FIDIC and PPA Contracts, with the help of the conditions stated clearly in the Contract share the risk between the parties. However, the management of this risk distribution may differ. Standard Forms of Contracts being used in the construction industry generally contain most of the risks and certify reconciliation between the parties.

In construction projects, not only controllable risks such as changes in administrative and operational performances, bad weather, the effect of inflation on costs, but also risks cannot be controlled, such as a specific ground soil conditions are also important.

Therefore, a Construction Contract should contain provisions on insurance and compensation.

Questionnaires

1. On which type of risks does your company work as an insurance coverage?

☐ Property insurance

☐ Liability insurance

☐ Life Assurance

☐ Others (if available) _____

2. Do you give services on construction related insurances/bonds?

☐ Yes

☐ No

3. Which type of liability insurance for construction companies does your company give coverage?

☐ Bonds

☐ Professional Indemnity

☐ Product liability coverage

☐ Third party

☐ All Contractor's Risk Insurance (ACR)

☐ Others (if available) _____

4. Which types of bonds are common in your company?

☐ Bid

☐ Advance

☐ Performance

☐ Retention

☐ Damage liability

☐ Others (if available) _____

5. From the above question number 4, do you have any cases to be mentioned in which your company encountered difficulty on covering risk due to default from the Principal (Client) and/or contractor (Supplier)?

☐ Yes

☐ No

6. If yes for number 5, please state shortly the conditions

7. What remedy/ steps are taken as an action from your insurance company?

8. Which of the following do you think most frequent insurance claims in our country?

☐ Damage caused by floods

☐ Damage caused by fire

☐ Damage caused by lightening

☐ Damage caused by explosion

☐ Damage caused by theft

If any other, please specify

9. Based on the above question, what is the experience of your insurance company?

☐ Damage caused by floods

☐ Damage caused by fire

☐ Damage caused by lighting

☐ Damage caused by explosion

☐ Damage caused by theft

If any other, please specify

10. Is there any actual case faced?

☐ Yes

☐ No

11. If yes, what was the damage?

12. In what phases of construction project I should focus more to manage construction risks?

☐ Planning

☐ Production phase

13. Which of the following parties bear more risks during the construction process?

☐ Contractor

☐ Client